epinastic, although exceedingly small. There is also a formation, of course, of chlorophyll, and these differences suffice to distinguish between the etiolated and *hydrolated* plant. The interesting point is the permanent epinasty induced by atmospheric hydrolation; it is quite as marked in the small hydrolated leaves of Solanum tuberosum as in the large normal leaves of the same plant. Along this line further researches would supplement Wiesner's work and probably confirm and extend the investigations of Palladin. At any rate the Solanum tuberosum is recommended as a highly sensitive hydrolitic plant, and its further examination suggested to botanical workers as of much probable interest.

A monograph of plant-torsions.[1]

It is quite impossible to do justice to this voluminous and painstaking record of physiological research in a brief review. Mention will be made, therefore, of but one among the very numerous points of interest. In his researches upon the torsions in plant-organs, De Vries has had occasion to study particularly the Dipsacus sylvestris, a plant prone to exhibit these anomalous twistings of stems and leaves. He has accordingly cultivated the plant for many years in the botanical garden at Amsterdam. In six years, by careful selection, this distinguished investigator has established a variety of the teasel which is so constantly characterized by torsions in the stem and leaves that he proposes for it the name of Dipsacus sylvestris torsus. That these monstrous plants can be so rapidly produced by a systematic process of seed-selection is indeed worthy of note. For figures and descriptions the reader is referred to the article itself, which is one of the two or three most notable botanical works of the past year.

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BRIEFER ARTICLES.

Atriplex corrugata, n. sp.— Dicœcious, shrubby at base, much branched, about a foot high, hoary throughout with a dense scurfy pubescence, very leafy: leaves linear-oblanceolate or -oblong, obtuse

[1] Hugo de Vries: Monographie der Zwangsdrehungen. Pringsheim's Jahrbücher für wiss. Botanik, xxiii, pp. 13–206.

or acutish, entire, 3 to 6 lines long: staminate flowers in short crowded terminal spikes; pistillate flowers in axillary clusters; bracts thick and spongy, 1½ to 2 lines long, obovate, united to above the middle, the free margins above broad and truncate or rounded or acutish, entire, the sides very variously and irregularly appendaged with spongy tubercles or crests which have usually a corrugated appearance when dry.—Nearly allied to *A. Nuttallii.* Discovered by Miss Alice Eastwood at Grand Junction, Colorado, in well formed fruit on 20th May, 1891. Miss Eastwood notes it as the earliest in fruit of several perennial species of the genus growing in the same locality.

RANUNCULUS GLABERRIMUS, Hook.—This common alpine species of the western mountains is much more variable in several respects than the published descriptions would indicate. The leaves vary from broad to narrow, and though the cauline leaves are ordinarily lobed, at least some of them, yet it occasionally happens that all are entire. The plant is as a rule wholly glabrous, but the sepals are sometimes sparsely villous with white hairs, and the achenes are either smooth or finely pubescent. This more pubescent form, as collected by Mr. Siler in southern Utah with entire leaves, was referred by Dr. Gray to *R. Lemmoni*, which species is as yet known only from the original locality in the Sierra Nevada.

RANUNCULUS MACAULEYI, Gray.—Fine fruiting specimens of this rare species have been recently collected by Miss Eastwood in the Elk Mountains above Irwin, Colorado. The achenes are small, in an oblong-ovate head, smooth, somewhat compressed, and beaked with a rather long linear-subulate straight style. The species appears to be well distinguished from *R. Altaicus* by its pilose-ciliate leaves, glabrous linear-oblong receptacle, and longer styles.—SERENO WATSON, *Cambridge, Mass.*

The sterile flowers of Panicum clandestinum.—The past season there was brought into the laboratory by a student a specimen of this species in which the sterile flowers had three well developed stamens. According to Gray's Manual, the lower or sterile flower is "(always?) neutral." On examination of a large number of specimens from this vicinity, it was found that by far the greater number had the lower or sterile flowers staminate. Specimens from Nebraska showed many staminate flowers also. Michigan specimens had the sterile flowers neutral. It was also observed that specimens collected early in the season had a larger number of staminate flowers than those collected later.—THOS. A. WILLIAMS, *State Agricultural College, Brookings, S. D.*

Peculiar forms of proliferation in timothy. (WITH PLATE XXVI.)—In a small plat of Timothy growing on the Experiment Station